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Substitute for form 1449/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(Use as many sheets as necessary)</i>		<i>Complete if Known</i>		
		<b>Application Number</b>	10/693,169	
		<b>Filing Date</b>	2003-10-23	
		<b>First Named Inventor</b>	WALLACE; Mark S.	
		<b>Art Unit</b>	2476	
		<b>Examiner Name</b>	HALIYUR, Venkatesh	
<b>Sheet</b>	1	<b>of</b>	8	<b>Attorney Docket No:</b> 020621

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2(f)</sup> (known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	001	US4736371	04-05-1988	TEJIMA; Shunichiro et al.	
	002	US5479447	12-26-1995	CHOW; Peter S. et al.	
	003	US5493712	02-20-1996	RAMESH; Nallepalli S. et al.	
	004	US5790550	08-04-1998	PEETERS; Johan et al.	
	005	US5822374	10-13-1998	LEVIN; Howard E.	
	006	US6072779	06-06-2000	TZANNES; Marcos et al.	
	007	US6122247	09-19-2000	LEVIN; Howard E. et al.	
	008	US6205410	03-20-2001	CAI; Lujing	
	009	US6222888	04-24-2001	KAO; Chiihsin et al.	
	010	US6275543	08-14-2001	PETRUS; Paul et al.	
	011	US6330277	12-11-2001	GELBLUM; Ehud Alexander et al.	
	012	US6426971	07-30-2002	WU; Qiang et al.	
	013	US6463290	10-08-2002	STILP; Louis A. et al.	
	014	US6478422	11-12-2002	HANSEN; Richard Arvid	
	015	US6510184	01-21-2003	OKAMURA; Yusaku	
	016	US6515617	02-04-2003	DEMERS; Stephanie et al.	
	017	US6574267	06-03-2003	KANTERAKIS; Emmanuel et al.	
	018	US6636496	10-21-2003	CHO; Dong-Ho et al.	
	019	US6744811	06-01-2004	KANTSCHUK; Amir	
	020	US6757263	06-29-2004	OLDS; Keith A.	

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	021	US6798738	09-28-2004	DO; Sang-Hyun et al.	
	022	US6804191	10-12-2004	RICHARDSON; Tom	
	023	US6821535	11-23-2004	NURMI; Juha et al.	
	024	US6927728	08-09-2005	VOOK; Frederick W. et al.	
	025	US6952454	10-04-2005	JALALI; Ahmad et al.	
	026	US6959171	10-25-2005	TSIEN; Chih C. et al.	
	027	US6980601	12-27-2005	JONES; David Charles	
	028	US6985534	01-10-2006	MEISTER; Wolfgang	
	029	US7003044	02-21-2006	SUBRAMANIAN; Chandrasekarapuram A. et al.	
	030	US7006848	02-28-2006	LING; Fuyun et al.	
	031	US7039125	05-02-2006	FRIEDMAN; Vladimir	
	032	US7058367	06-06-2006	LUO; Hui et al.	
	033	US7127009	10-24-2006	BERTHET; Antoine et al.	
	034	US7130362	10-31-2006	GIRARDEAU; James et al.	
	035	US7137047	11-14-2006	MITLIN; Vlad et al.	
	036	US7184713	02-27-2007	KADOUS; Tamer et al.	
	037	US7191381	03-13-2007	GESBERT; David J. et al.	
	038	US7274734	09-25-2007	TSATSANIS; Michail	
	039	US7333556	02-19-2008	MALTSEV; Alexander A. et al.	
	040	US7356004	04-08-2008	YANO; Takashi et al.	

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	041	US7356089	04-08-2008	JIA; Ming et al.	
	042	US7379492	05-27-2008	HWANG; In Tae	
	043	US7508748	03-24-2009	KADOUS; Tamer	
	044	US7599443	10-06-2009	IONESCU; Dumitru M. et al.	
	045	US7603141	10-13-2009	DRAVIDA; Subrahmanyam	
	046	US20010017881	08-30-2001	BHATOOLAUL; David Lahiri et al.	
	047	US20020027951	03-07-2002	GORMLEY; Eamonn et al.	
	048	US20020044610	04-18-2002	JONES; David	
	049	US20020075830	06-20-2002	HARTMAN; David L. Jr.	
	050	US20030039317	02-27-2003		
	051	US20030045288	03-06-2003	LUSCHI; Carlo et al.	
	052	US20030076812	04-24-2003	BENEDITTIS; Rosella De	
	053	US20030185311	10-02-2003	KIM; Yong-Woon	
	054	US20040005887	01-08-2004	BAHRENBURG; Stefan et al.	
	055	US20040071107	04-15-2004	KATS; Marat G. et al.	
	056	US20040120411	06-24-2004	WALTON; Jay Rodney et al.	
	057	US20040151108	08-05-2004	BLASCO CLARET; Jorge Vicente et al.	
	058	US20040151122	08-05-2004	LAU; Kin Nang et al.	
	059	US20040184398	09-23-2004	WALTON; Jay Rod et al.	

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	060	US20040252632	12-16-2004	BOURDOUX; Andre et al.	
	061	US20050047515	03-03-2005	WALTON; J. Rodney et al.	
	062	US20050099974	05-12-2005	KATS; Marat et al.	
	063	US20050147177	07-07-2005	SEO; Dong-Youn et al.	
	064	US20050185575	08-25-2005	HANSEN; Christopher J. et al.	
	065	US20050220211	10-06-2005	SHIM; Dong-Hee et al.	
	066	US20050276343	12-15-2005	JONES; David Charles	
	067	US20060018395	01-26-2006	TZANNES; Marcos C.	
	068	US20060067417	03-30-2006	PARK; Chang-Soon et al.	
	069	US20060072649	04-06-2006	CHANG; Kyung-Hi et al.	
	070	US20060153237	07-13-2006	HWANG; In Tae et al.	
	071	US20060159120	07-20-2006	KIM; Joonsuk	
	072	US20060209894	09-21-2006	TZANNES; Marcos et al.	
	073	US20060209937	09-21-2006	TANAKA; Yoshinori et al.	
	074	US20070274278	11-29-2007	CHOI; Sung-Ho et al.	
	075	US20080069015	03-20-2008	WALTON; J. Rodney et al.	
	076	US20080267098	10-30-2008	WALTON; J. Rodney et al.	
	077	US20080267138	10-30-2008	WALTON; J. Rodney et al.	
	078	US20100067401	03-18-2010	MEDVEDEV; Irina et al.	
	079	US20100119001	05-13-2010	WALTON; J. Rodney et al.	

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		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	080	CN1469662	01-21-2004	LG ELECTRONICS INC.		<input checked="" type="checkbox"/>
	081	CN1537371	10-13-2004	MATSUSHITA ELECTRIC IND CO LTD.		<input checked="" type="checkbox"/>
	082	EP1126673A2	08-22-2001	THOMSON LICENSING INC [FR]		<input type="checkbox"/>
	083	EP1137217	09-26-2001	ERICSSON TELEFON AB L M [SE]		<input type="checkbox"/>
	084	EP1416688A1	05-06-2004	MOTOROLA INC [US]		<input type="checkbox"/>
	085	EP1447934A1	08-18-2004	INST EURECOM G I E [FR]		<input type="checkbox"/>
	086	JP06003956	01-14-1994	SEIKO EPSON CORP.		<input type="checkbox"/>
	087	JP10303794A	11-13-1998	MITSUBISHI ELECTRIC CORP.		<input type="checkbox"/>
	088	JP2000078105	03-14-2000	NEC CORP.		<input checked="" type="checkbox"/>
	089	JP2002232943A	08-16-2002	SONY CORP.		<input checked="" type="checkbox"/>
	090	JP2002504283	02-05-2002	AWARE INC.		<input type="checkbox"/>
	091	JP2003198442	07-11-2003	HITACHI LTD., et al.		<input checked="" type="checkbox"/>
	092	JP2004266586	09-24-2004	HITACHI LTD.		<input checked="" type="checkbox"/>
	093	JP2004297172	10-21-2004	SHARP CORP.		<input checked="" type="checkbox"/>
	094	JP2004535694	11-25-2004	QUALCOMM INCORPORATED.		<input type="checkbox"/>
	095	JP2005519520	06-30-2005	QUALCOMM INCORPORATED.		<input type="checkbox"/>
	096	JP2006504372	02-02-2006	QUALCOMM INCORPORATED.		<input checked="" type="checkbox"/>
	097	KR200011799	02-25-2000	SAMSUNG		<input type="checkbox"/>

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				ELECTRONICS CO LTD [KR]		
	098	KR20010098861	11-08-2001	NEC CORPORATION., et al.		<input type="checkbox"/>
	099	KR20030085040	11-01-2003	QUALCOMM INCORPORATED.		<input checked="" type="checkbox"/>
	100	TW545006B	08-01-2003	WORLDSPACE MAN CORP [US]		<input type="checkbox"/>
	101	TW583842B	04-11-2004	KONINKL PHILIPS ELECTRONICS NV [NL]		<input type="checkbox"/>
	102	TWI230525	04-01-2005	QUALCOMM INC [US]		<input checked="" type="checkbox"/>
	103	WO02093784A1	11-21-2002	QUALCOMM INC [US]		<input type="checkbox"/>
	104	WO03075479	09-12-2003	QUALCOMM INCORPORATED [US]		<input type="checkbox"/>
	105	WO04038986	05-06-2004	QUALCOMM INCORPORATED,US.		<input type="checkbox"/>
	106	WO05043855	05-12-2005	QUALCOMM INCORPORATED [US]		<input type="checkbox"/>
	107	WO2004038985A2	05-06-2004	QUALCOMM INC [US]		<input type="checkbox"/>
	108	WO86007223	12-04-1986	TELEBIT CORPORATION.		<input type="checkbox"/>
	109	WO9507578	03-16-1995	QUALCOMM INCORPORATED [US]		<input type="checkbox"/>
	110	WO9736377A1	10-02-1997	MOTOROLA INC [US]		<input type="checkbox"/>
	111	WO9857472	12-17-1998	AWARE INC [US]		<input type="checkbox"/>
	112	WO99014878	03-25-1999	QUALCOMM INCORPORATED.		<input type="checkbox"/>

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		<b>Filing Date</b>	2003-10-23	
		<b>First Named Inventor</b>	WALLACE; Mark S.	
		<b>Art Unit</b>	2476	
		<b>Examiner Name</b>	HALIYUR, Venkatesh	
<b>Sheet</b>	7	of	8	<b>Attorney Docket No:</b> 020621

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T2
	113	BONG-GEE SONG et al., "Prefilter design using the singular value decomposition for MIMO equalization" SIGNALS, SYSTEMS AND COMPUTERS, vol. 1, 3 November 1996 (1996-11-03), - 6 November 1996 (1996-11-06), pages 34-38, XP010231388, IEEE, US DOI : 10.1109/ACSSC. 1996.600812 ISBN: 978-0-8186-7646-8, page 35, column 2, paragraph 4 - page 36, column 1.		<input type="checkbox"/>
	114	Grunheid et al., "Adaptive Modulation and Multiple Access for the OFDM Transmission Technique", Wireless Personal Communications 13: 5/13/2000, 2000 Kluwer Academic Publishers, pgs 4-13.		<input type="checkbox"/>
	115	LE GOFF S ET AL: "Turbo-codes and high spectral efficiency modulation" COMMUNICATIONS, 1994. ICC '94, SUPERCOMM/ICC '94, CONFERENCE RECORD, " SERVING HUMANITY THROUGH COMMUNICATIONS." IEEE INTERNATIONAL CONFERENCE ON NEW ORLEANS, LA, USA 1-5 MAY 1994, NEW YORK, NY, USA. IEEE, 1 May 1994 (1994-05-01), pages 645-649, XP010126658 ISBN: 978-0-7803-1825-0.		<input type="checkbox"/>
	116	Office Action dated August 13, 2008 for Australian Application Serial No. 2004223374, 2 pages.		<input type="checkbox"/>
	117	Office Action dated June 27, 2008 for Chinese Application Serial No.200480011307.6, 3 pages.		<input type="checkbox"/>
	118	Wyglinski "Physical Layer Loading Algorithms for Indoor Wireless Multicarrier Systems, page 109 Nov. 2004.		<input type="checkbox"/>

EXAMINER SIGNATURE

DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. † Applicant's unique citation designation number (optional). ‡ See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. § Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ¶ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. \*Kind of document by the appropriate symbols as indicated on the document under WIFO Standard ST. 16 if possible. \*Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Substitute for form 1449/PTO				<i>Complete if Known</i> <b>Application Number</b> 10/693,169 <b>Filing Date</b> 2003-10-23 <b>First Named Inventor</b> WALLACE; Mark S. <b>Art Unit</b> 2476 <b>Examiner Name</b> HALIYUR, Venkatesh	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>					
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<b>Sheet</b>	<b>8</b>	<b>of</b>	<b>8</b>	<b>Attorney Docket No:</b> 020621	

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

- ☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

- ☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

- ☐ See attached certification statement.
- ☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
- ☒ None

### SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/jameshuntancyjr53809/	Date (YYYY-MM-DD)	27 September 2011
Name/Print	James Hunt Yancey, Jr.	Registration Number	53809

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